Supplementary Table S1: Kinase activity and selectivity for NVP-BGJ398

Assay	Kinase	IC50 uM	Kinase	IC50 uM
Biochemical	FGFR1	0.0009	FGFR3	0.0010
	FGFR2	0.0014	FGFR4	0.060
Cellular autophosphorylation	FGFR1	0.0065	FGFR3	0.0058
	FGFR2	0.0058	FGFR4	0.225
BaF3 cellular proliferation	FGFR1	0.0099	ALK	>8
	FGFR2	0.0106	BMX	>8
	FGFR3	0.0139	EGFR_L858R	>8
	FGFR4	0.3915	EGFR_vIII	>8
	VEGFR2	1.019	FLT3	>8
	FLT4	2.072	IGF1R	>8
	TIE1	2.429	KIT	>8
	FLT1	2.694	LYN	>8
	MET	3.138	MER	>8
	TIE2	3.802	MET-CTG	>8
	LCK	3.952	PDGFRa	>8
	BRAF-V600E	4.564	PDGFRb	>8
	FGR	6.006	RET	>8
	INSR	6.079	RON	>8
	KrasV12	6.299	ROS	>8
	FRK	6.299	SYK	>8
	BLK	6.423	Tpr_MET_Y1230H	>8
	JAK2-V617F	6.53	TRKA	>8
	JAK2	6.726	TRKB	>8
	SRC	7.125	TYRO3	>8
	BCR-ABL	7.445	Wild type	>8

The ability of NVP-BGJ398 to inhibit the indicated kinases was measured in biochemical, cellular autophopshorylation and BaF3 cell proliferation assays. The concentration responsible for 50% inhibition of the activity is reported (IC50) in uM units.

Supplementary Table S2: CCLE cell lines sensitive to NVP-BGJ398 (IC50 < 500 nM)

Cell line	Cancer type	FGFR / FGF genetic alteration
A172	glioma	None detected
A2780	ovary	None detected
AN3 CA	endometrium	FGFR2 mutation
CAL-120	breast	FGFR1 amplification
CAL-78	chondrosarcoma	None detected
DMS 114	lung	FGFR1 and FGF19 amplification
FU97	gastric	None detected
G-292	osteosarcoma	FGFR1 amplification
GAMG	glioma	None detected
Hep 3B2.1-7	liver	FGF19 amplification
HuH-7	liver	FGF19 amplification
JHH-7	liver	FGF19 amplification
JHUEM-2	endometrium	FGFR2 mutation
JMSU-1	urinary_tract	None detected
KATO III	gastric	FGFR2 amplification
KG-1	haematop / lymph	8p11 translocation
KMS-11	haematop / lymph	t(4,14) translocation and FGFR3 mutation
MDA-MB-134-VI	breast	FGFR1 and FGF19 amplification
MDA-MB-453	breast	None detected
MFE-280	endometrium	FGFR2 mutation
MFE-296	endometrium	FGFR2 mutation
MSTO-211H	mesothelioma	None detected
NCI-H1581	lung	FGFR1 amplification
NCI-H716	colon	FGFR2 amplification
OPM-2	haematop / lymph	t(4,14) translocation and FGFR3 mutation
RT-112	urinary_tract	FGFR3 amplification
RT112/84	urinary_tract	FGFR3 amplification
RT4	urinary_tract	None detected
SF126	glioma	None detected
SNU-16	gastric	FGFR2 amplification
SW 1353	chondrosarcoma	None detected
SW 780	urinary_tract	None detected

Cell lines whose proliferation was inhibited by NVP-BGJ398 with IC50 < 500 nM are shown. Genetic alterations in the FGF/FGFR family found in these cell lines are indicated.

Supplementary Table S3: GeneSet expression signatures

Development FGF-family signaling	Inhibition of Hedgehog signaling in medulloblastoma stem cells
FGF1	ADCY1
FGF10	ADCYAP1
FGF16	ADCYAP1R1
FGF19	BMI1
FGF2	CCND1
FGF3	CRK
FGF4	DOCK1
FGF6	FGF1
FGF7	FGF2
FGF8	FGF4
FGF9	FGFR1
FGFR1	FGFR2
FGFR2	FGFR3
FGFR3	FGFR4
FGFR4	FRS2
FRS2	GLI1
GAB1	GLI2
GRB2	GNAS
HRAS	GRB2
HSPG2	HRAS
ITPR1	MAP2K1
ITPR2	MAP2K2
ITPR3	MAP2K4
PIK3CA	MAP3K1
PIK3CB	MYCN
PIK3CD	PAK1
PIK3R1	PTCH1
PIK3R2	PTPN11
PLCG1	RAC1
PRKCD	RAF1
PTPN11	SHC1
SHC1	SHH
SOS1	SMO
SOS2	

Supplementary Table S4: FGFR genetic alterations and concomitant mutations

Cell line	Cancer type	BGJ398 response	FGFR genetic alteration	Other mutation
CAMA-1	breast	Insensitive	FGFR1 amplification	PTEN, TP53
JIMT-1	breast	Insensitive	FGFR1 amplification	TP53
ZR-75-1	breast	Insensitive	FGFR1 amplification	PTEN, CDKN2A
COR-L88	lung	Insensitive	FGFR1 amplification	RB1, TP53
DMS 454	lung	Insensitive	FGFR1 amplification	
NCI-H1703	lung	Insensitive	FGFR1 amplification	CDKN2A, TP53
NCI-H2444	lung	Insensitive	FGFR1 amplification	KRAS
NCI-H520	lung	Insensitive	FGFR1 amplification	CDKN2A, TP53
HCC1395	breast	Insensitive	FGFR1 mutation	PTEN, CDKN2A, TP53
NCI-H2009	lung	Insensitive	FGFR2 mutation	RB1, TP53, KRAS
A-375	melanoma	Insensitive	FGFR2 mutation	CDKN2A, BRAF
FU-OV-1	ovarian	Insensitive	FGFR3, FGFR4 amplification	
J82	urinary_tract	Insensitive	FGFR3 mutation	PTEN, RB1, TP53, PIK3CA
HCC1954	breast	Insensitive	FGFR4 amplification	TP53, PIK3CA
HEC-50B	endometrial	Insensitive	FGFR4 amplification	KRAS
JHOS-4	ovarian	Insensitive	FGFR4 amplification	
OVSAHO	ovarian	Insensitive	FGFR4 amplification	
KMS-28BM	haematop / lymph	Insensitive	t(4,14) translocation	KRAS
KMS-34	haematop / lymph	Insensitive	t(4,14) translocation	TP53
LP-1	haematop / lymph	Insensitive	t(4,14) translocation	TP53
KG-1	haematop / lymph	Sensitive	8p11 translocation	TP53
CAL-120	breast	Sensitive	FGFR1 amplification	TP53
MDA-MB-134-VI	breast	Sensitive	FGFR1 amplification	
DMS 114	lung	Sensitive	FGFR1 amplification	TP53
NCI-H1581	lung	Sensitive	FGFR1 amplification	TP53, APC
G-292	osteosarcoma	Sensitive	FGFR1 amplification	
NCI-H716	colorectal	Sensitive	FGFR2 amplification	TP53
KATO III	gastric	Sensitive	FGFR2 amplification	TP53
SNU-16	gastric	Sensitive	FGFR2 amplification	CDKN2A
AN3 CA	endometrial	Sensitive	FGFR2 mutation	PTEN, TP53
JHUEM-2	endometrial	Sensitive	FGFR2 mutation	CTNNB1
MFE-280	endometrial	Sensitive	FGFR2 mutation	RB1, TP53, PIK3CA
MFE-296	endometrial	Sensitive	FGFR2 mutation	PTEN, TP53, PIK3CA
RT-112	urinary_tract	Sensitive	FGFR3 amplification	CDKN2A, TP53
RT112/84	urinary_tract	Sensitive	FGFR3 amplification	
KMS-11	haematop / lymph	Sensitive	t(4,14) translocation, FGFR3 mutation	
OPM-2	haematop / lymph	Sensitive	t(4,14) translocation, FGFR3 mutation	PTEN, TP53

CCLE cell lines with FGFR genetic alterations. The known oncogenes found to have concomitant mutations are indicated.